

CLAIMS

What is claimed is:

5

1. An enhanced passive scanning method for a wireless local area network, comprising:

receiving at least one of a beacon signal and a gratuitous probe response;

10

updating a site timing table entry in a site timing table based on the received beacon signal and gratuitous probe response; and

setting a scan start time based on entries in the updated site timing table.

15

2. The method of claim 1 wherein at least one of the beacon signal and the gratuitous probe response are received from at least one of a mobile station and an access point.

20

3. The method of claim 1 wherein the beacon signal is received from an access point, the beacon signal including an access-point timestamp, a beacon interval, a basic service set identifier, and a traffic indication map.

25

4. The method of claim 1 wherein the gratuitous probe response is received from an access point, the gratuitous probe response including an access-point timestamp, a gratuitous probe response interval, and a basic service set identifier.

5. The method of claim 1 wherein the updated site timing table includes an access-point timestamp, a local station timestamp, a beacon interval, and a gratuitous probe response interval.

5

6. The method of claim 1 further comprising determining a power mode for a wireless communication device based on the scan start time.

7. The method of claim 6 wherein determining a power mode based on the scan start time comprises determining a time period remaining until a target beacon transmission time and a target gratuitous probe response transmission time is scheduled.

8. The method of claim 1 further comprising:
15 scanning at least one channel for the beacon signal and the gratuitous probe response.

9. The method of claim 8 wherein scanning at least one channel comprises one of performing an active scan, performing a passive scan, and
20 performing an enhanced passive scan.

10. The method of claim 1 further comprising:
creating the site timing table with at least one site timing table entry,
the site timing table based on at least one of a received beacon signal and a
25 gratuitous probe response.

11. The method of claim 10 wherein creating the site timing table entry comprises tuning to an access point channel, receiving at least one of the beacon signal and the gratuitous probe response, collecting transmission
30 measurements of an access point, and storing access point information in the site timing table.

12. The method of claim 1 further comprising:
selecting an access point based on at least one of the received
beacon signals and gratuitous probe responses.

5

13. The method of claim 1 further comprising:
generating an enhanced passive scan schedule based on at least
one site timing table entry in the site timing table, the enhanced passive scan
schedule including a channel number, a local scan start time, and a maximum
10 channel scan time for each site timing table entry in the site timing table.

14. An enhanced passive scanning system for a wireless local area
network, comprising:
means for receiving at least one of a beacon signal and a
15 gratuitous probe response;
means for updating a site timing table entry in a site timing table
based on at least one of the received beacon signal and gratuitous probe
response; and
means for setting a scan start time based on entries in the updated
20 site timing table.

15. The system of claim 14 further comprising:
means for scanning at least one channel for at least one of the
beacon signal and the gratuitous probe response.

25

16. The system of claim 15 further comprising:
means for creating the site timing table with at least one site timing
table entry, the site timing table based on at least one of a received beacon
signal and a gratuitous probe response.

30

17. The system of claim 14 further comprising:
means for selecting an access point based on at least one of the
received beacon signals and gratuitous probe responses.

5 18. The system of claim 14 further comprising:
means for generating an enhanced passive scan schedule based
on at least one site timing table entry in the site timing table, the enhanced
passive scan schedule including a channel number, a local scan start time, and a
maximum channel scan time for each site timing table entry in the site timing
10 table.

19. The system of claim 14 further comprising:
means for determining a power mode for a wireless communication
device based on the scan start time.

15 20. A computer usable medium including a program for enhanced
passive scanning for a wireless local area network, comprising:
computer program code to receive at least one of a beacon signal
and a gratuitous probe response;
20 computer program code to update a site timing table entry in a site
timing table based on the received beacon signal and gratuitous probe response;
computer program code to set a scan start time based on entries in
the updated site timing table; and
computer program code to determine a power mode for a wireless
25 communication device based on the scan start time.

21. The computer usable medium of claim 20 further comprising:
computer program code to scan at least one channel for at least
one of the beacon signal and the gratuitous probe response.
30

22. The computer usable medium of claim 20 further comprising:
computer program code to create the site timing table with at least
one site timing table entry, the site timing table based on at least one received
5 beacon signal and gratuitous probe response.

23. The computer usable medium of claim 20 further comprising:
computer program code to select an access point based on at least
one of the received beacon signals and gratuitous probe responses.

10

24. The computer usable medium of claim 20 further comprising:
computer program code to generate an enhanced passive scan
schedule based on at least one site timing table entry in the site timing table, the
enhanced passive scan schedule including a channel number, a local scan start
15 time, and a maximum channel scan time for each site timing table entry in the
site timing table.